

Appendix G

SENSITIVE PLANT SPECIES HABITAT

Figure G-1. Habitat Descriptions for Species Suspected (S) Or Documented (D) On the Okanogan-Wenatchee NF On the Regional Forester's Sensitive Plant List (July 2004 Revision)

<i>Scientific Name</i>	Status	Habitat**
<i>Agoseris elata</i> Tall Agoseris	D	On the Oka. this species is found between 4000-7760' on S to W aspects in moist to wet swells and meadows primarily in the subalpine and alpine habitats. Habitat in Washington is associated w/ moist to dry meadows, open woods, and exposed rocky ridge tops on various aspects from low elevations to timberline between 2900 and 7800'.
<i>Agrostis borealis</i> Northern Bentgrass	D	Known on the Okanogan from mainly alpine meadows above 7000' elevation. Mesic to moist meadow habitats near streams and wetlands.
<i>Anemone nuttalliana</i> Pasqueflower	S	In Washington it is known to occur around 5700' to 6000' growing in more open areas on small benches where soil has been exposed in rocky areas. Habitat range prairies, open meadows, and mountain slopes mostly on well drained soil.
<i>Astragalus microcystis</i> Least Bladdery Milk-vetch	S	In eastern Washington the species occurs on gravelly to sandy areas from riverbanks to open woods from 1400' to 6200' elevation. Associated species include <i>Gaillardia aristata</i> , <i>Gilia aggregate</i> , and <i>Melilotus alba</i> .
<i>Botrychium ascendens</i> Triangular-lobed Moonwort	D	On the Oka. this species is found on most aspects (S, SW, SE, W) with gentle to flat topography between 5800' to 6300' in moist meadows in glacial cirques. Habitat in Washington ranges from 2100' to 6000' in moist microsites in meadows and moist deciduous and conifer forests,
<i>Botrychium compestre</i> Prairie Moonwort	S	Moist to dry meadows from low elevation prairies to alpine meadows.
<i>Botrychium crenulatum</i> Crenulate Moonwort	D	On the Oka. This species is found in moist riparian habitats comprised of dense red osier dogwood (COST) and cottonwood (POTR2) and is associated with moist coniferous riparian zones dominated by western red cedar (THPL), Engelmann spruce (PIEN), and subalpine fir (ABLA) from 3100' to 5800' in elevation. In Washington, it appears to favor similar forested habitats and elevations between 2000' and 4000' in Stevens, Ferry, and Pend Orielle counties.
<i>Botrychium hesperium</i> Western Moonwort	D	Moist to dry meadows from low elevation prairies to alpine meadows. Documented on the Okanogan in a small opening at the base of a glacial moraine in an alpine larch (LALY) forest at 6900'. On the Colville NF it is known from moist to dry meadow openings in dry forest habitats between 2900' and 3700'.
<i>Botrychium lineare</i> Skinny Moonwort Proposed Federal Candidate Threatened	S	This is species and the Federal Register describes the habitat as being found in a variety of montane forest or meadow habitats. Known occupied habitats include deep grass and forb meadows, under trees in woods, and on shelves on limestone cliffs, mainly at higher elevations. It also occurs as an early seral species in open habitats dominated by low-growing forbs. In open forest habitats it is associated with strawberry (FRVI), pussy-toes (<i>Antennaria</i> spp), northern bedstraw (GABO), cinquefoil (<i>Potentilla</i>), snowberry (SYAL), reedgrass (<i>Calamagrostis</i> spp), fescue (<i>Festuca</i> spp), Engelmann spruce (PIEN), w. red cedar (THPL), Douglas-fir (PSME), ponderosa pine (PIPO), lodgepole (PICO), and aspen (POTR). Generally thought to be associated with moist to dry meadows from low elevation prairies to alpine meadows.
<i>Botrychium paradoxum</i> Two-spiked Moonwort	D	On the Oka. This species is known to be associated with dry meadows in floodplains in gentle to flat terrain between 5600' and 6450' elevation. In other areas of the state it is found between 2800' and 6550' elevation in a variety of habitats which include sagebrush (<i>Artemisia</i>) habitat, dry meadow communities

Scientific Name	Status	Habitat**
		associated with floodplains and stream terraces, and moist coniferous forests in association with western red cedar (THPL), western hemlock (TSHE), and grand fir (ABGR).
<i>Botrychium penduculosum</i> Stalked Moonwort	S	Known sites in the state occur between 2460' and 6200' elevation in moist riparian, moist to dry meadows found in a moist forest mix of species such as PIEN, PICO, POTR, COST, THPL, ABGR, LAOC, and ABLA. Generally thought to be associated with moist to dry meadows from low elevation prairies to alpine meadows.
<i>Carex atrosquama</i> (<i>C. atrata</i> var <i>atrosquama</i>) Blackened Sedge	D	Wet to moist soils along outlet streams, in wet subalpine and alpine meadows above 6100'. Frequently associated species are <i>Trollius laxus</i> , <i>Caltha leptosepala</i> , <i>Carex scopulorum</i> , <i>Phleum alpinum</i> , and <i>Valeriana sitchensis</i> .
<i>Carex capillaries</i> Hair-like Sedge	D	Known from two sites on the Okanogan associated with moist meadows along sandy lake shores from 3800' to 6500'. Other habitat includes stream banks, wet ledges in moderate to high elevations up to about timberline.
<i>Carex chordorrhiza</i> Cordroot Sedge	D	One population known in the State. It occurs in wetland at 4480' in the Subalpine fir forest zone. Dominant conifers in the area are Engelmann spruce, Subalpine fir, and lodgepole pine. It grows in muck soils hummocks interspersed in predominantly a <i>Carex lasiocarpa</i> community with other associates including <i>Carex magellanica</i> ssp. <i>irrigua</i> , <i>Spiranthes romanzoffiana</i> , and <i>Galium trifidum</i> .
<i>Carex comosa</i> Bristly Sedge	S	In the state it known to be associated with floating mats of vegetation in muck and peat wetlands. General habitats are marshes, lake-shores, and wet meadows from 50' to 2000' elevation. Associated spp may include <i>Carex utriculata</i> , <i>Potentilla palustris</i> , <i>Typha latifolia</i> , <i>Spiraea douglasii</i> , <i>Dulichium arundinaceum</i> and <i>Phalaris arundinacea</i> .
<i>Carex dioica</i> var <i>gynocrates</i> Yellow Bog Sedge	D	In the state it is found on the tops of hummocky terrain in wet PIEN habitats between 3500' and 5400' elevation. Washington habitats include sphagnum bogs, forested wetlands and other wet marshy places between 2600' and 3800'. Associated species include <i>Carex disperma</i> , <i>C. lanuginosa</i> , <i>C. capillaris</i> , <i>C. leptalea</i> , <i>Equisetum arvense</i> , <i>Rubus pubescens</i> , <i>Ledum groenlandicum</i> , <i>Betula glandulosa</i> , <i>Alnus incan</i> , <i>Salix</i> spps, PIEN, and PICO.
<i>Carex flava</i> Yellow Sedge	S	Wet meadows, forested wetlands, bogs, and shores of streams and lakes from the foothills and lowlands to moderate elevations between 2000' and 4300'. Associated spps include <i>Sphagnum</i> , <i>Carex utriculata</i> , <i>C. lenticularis</i> , <i>C. aurea</i> , <i>C. aenea</i> , <i>Eriophorum</i> sp, <i>Equisetum arvense</i> , <i>Scirpus</i> sp, <i>Juncus ensifolius</i> , <i>Potentilla palustris</i> , <i>Mentha arvense</i> , <i>Geum rivale</i> , and <i>Geum macrophyllum</i> .
<i>Carex heteroneura</i> (<i>C. heteroneura</i> var. <i>epapillosa</i>) Blackened Sedge	D	Stream margins in open forests and moist meadows in the subalpine to alpine zones.
<i>Carex hystericina</i> Porcupine Sedge	S	Occurs in wet depressions, spring fed marshes, ponds, along creeks, drainages, and along hillside seeps between 500' and 2600' elevation. Often associated with <i>Carex lasiocarpa</i> , <i>Eleocharis palustris</i> , <i>Eleocharis rostellata</i> , <i>Juncus balticus</i> , <i>Typha latifolia</i> , <i>Mimulus guttatus</i> , <i>Epipactis gigantea</i> , <i>Drosera anglica</i> , <i>Carex amplifolia</i> , <i>C. stipata</i> , and <i>Phalaris arundinacea</i> . Surrounding habitats range from dry canyon grassland habitats dominated by <i>Agropyron spicatum</i> to warm dry forested habitats with inclusions of <i>Thuja plicata</i> on the Colville. It appears to favor warm spring/water sources.
<i>Carex norvegica</i> Scandinavian Sedge	D	Wet stream banks, subalpine and alpine rich moist forb meadows. Often associated with wet site <i>Salix</i> species, <i>Trollius laxus</i> , <i>Caltha leptosepala</i> , <i>Carex species</i> , and <i>Senecio paciflorus</i> .
<i>Carex rostrata</i> Beaked Sedge	S	In Washington sites are associated with quaking or floating peat in w/ <i>Carex lasiocarpa</i> along lake shorelines between 4500' and 5000' elevation. Other associated species include <i>Carex limosa</i> , <i>Menyanthes _rifoliata</i> , <i>Pedicularis groenlandica</i> , <i>Droser anglica</i> , <i>Eriophorum polystachion</i> , <i>Nuphar polysepalum</i> and <i>Equisetum fluviatile</i> . Generally habitat is thought to be around ponds and swampy meadows, mid to high elevations.

Scientific Name	Status	Habitat**
<i>Carex saxatilis</i> var. <i>major</i> Russet Sedge	D	On the Okanogan it is found above 5000' in shallow wetlands, bogs, margins of ponds and streams with shallow standing water. Sites may become dry during drought years. Often forms monoculture stands in shallow water.
<i>Carex scirpoidea</i> var. <i>scirpoidea</i> Canadian Single Spike Sedge	D	Moist alpine meadows bordering talus slopes, dry to moist meadows, and talus with some soil development between 5900' and 7600'. Associated species are: <i>Carex breweri</i> , <i>Anemone drummondii</i> , <i>Haploppus Lyalii</i> , <i>Erigeron compositos</i> , <i>Carex nigricans</i> , <i>Juniperus communis</i> , and <i>Pinus albicalus</i> .
<i>Carex stenophylla</i> (<i>C. eleocharis</i>) Narrow-leafed Sedge	D	Open, dry to moderately moist, often grassy places, from the plains to fairly high elevations in the mountains. but not reaching to timberline. The only known site is near Conconully.
<i>Carex sychnocephala</i> Many-headed Sedge	D	Habitats, which include the known sites, are associated with permanently saturated, moist, or wet soils along lake shores and marshes from 1000' to 3000' elevation. Some sites are somewhat alkaline, Substrates vary from rather rocky to sandy and silty soils. Associated species include <i>Scirpus maritimus</i> , <i>Cyperus aristatus</i> , <i>Polygonum persicaria</i> , <i>Rumex maritimus</i> , <i>Conyza Canadensis</i> , <i>Aster brachyactis</i> , <i>Ranunculus sceleratus</i> , <i>Epilobium spp</i> , <i>Cirsium vulgare</i> and <i>C. arvense</i> .
<i>Carex tenuiflora</i> Sparse-leafed Sedge	D	One site known that occurs at 5800' in a bog/fen wetland. Dominant associate is sphagnum moss and other associates are: <i>Carex limosa</i> , <i>Carex utriculata</i> , <i>Carex canescens</i> .
<i>Carex vallicola</i> Valley Sedge	D	In the state, this species is only known on the Okanogan. It is primarily found in dry meadow communities with big sagebrush (ARTR) between 4300' and 6800' in elevation. Habitat in general is described as moist to moderately dry slopes from the foothills to moderate elevations in the mountains, often with sagebrush or aspen.
<i>Carex xerantica</i> White-scaled Sedge	D	On the Oka it occurs in open dry meadow habitats in dry ponderosa pine (PIPO) and Douglas-fir (PSME) coniferous forests, open dry meadows often with sagebrush between 2850' and 5440' in elevation. Habitat in general is described as grasslands, open slopes, and mountain parks from the high plains to the spruce-fir zone in the mountains.
<i>Castilleja cryptantha</i> Obscure Indian Paintbrush	D	Often found in high elevation meadows frequently associated <i>Antennaria lanata</i> , <i>Potentilla flabellifolia</i> , <i>Polygonum bistortoides</i> , <i>Lupinus</i> , <i>Danthonia</i> , <i>Poa</i> , , <i>Carex luzulina</i> , <i>Aster alpinus</i> , <i>Ligusticum grayii</i> , <i>Phyllodoce empetrifformis</i> , <i>Gentiana calycosa</i> , and <i>Antennaria</i>
<i>Chaenactis thompsonii</i> Thompson's chaenactis	D	Known to occur in mid-montane forest habitats with ABLA, PSME, and/or PIAL. Some other associated species are: <i>Aspidotis</i> , <i>Eriogonum spps</i> , <i>Gallium</i> , <i>Collomia</i> , <i>Gilia aggregata</i> , <i>Arctostaphylos nevadensis</i> , <i>Lomatium CF cuspidatum</i> , <i>Douglasia nivalis</i> , <i>Achillea millefolium</i> , <i>Cryptantha</i> , <i>Monardella</i> , <i>Physaria</i> , <i>Cheilanthes</i> , and <i>Phlox</i> .
<i>Cryptogramma stelleri</i> Steller's Rockbrake	D	Seeps and moist shaded places in cliff crevices in moderate to steep slopes 3000' to 6000'. Most frequently sited on calcareous substrights, growing in mats of moss and along seepage cracks, at bases of overhanging cliffs.
<i>Chrysosplenium tetrandrum</i> Northern Golden-carpet	D	Found in gentle terrain along steam banks and seeps where water accumulates or other wet sites in woods with densely vegetated creek bottoms, damp mossy hummocks. Picea engelmannii dominated riparian often associated with <i>Alnus incana</i> , <i>Ribes lacustre</i> , <i>Equisetum</i> , and <i>Cornus stoloniferous</i> .
<i>Circuta bulbifera</i> Bulb-bearing Water Hemlock	S	It is known to occur between 1930'-3700' in elevation in muck soils or standing water associated with marshes, stream, lake, or pond margins where <i>Carex utriculata</i> is often the dominant sedge.
<i>Cypridepium parviflorum</i> Yellow Lady's Slipper State Endangered	D	It is found in bogs, wet forest habitats, and in the channeled scablands of eastern Wash. it occurs around the periphery of ponds and in low, moist areas, generally in close association with red osier dogwood (COST) and aspen (POTR). It is also known to be associated with snowberry (SYAL) that is adjacent to COST communities with a ponderosa pine (PIPO) overstory between 2100' and 3440' elevation.
<i>Cypridepium fasciculatum</i>	S	Habitat is mid to late seral PSME or PIPO stands with a dense closed herbaceous layer and various shrub

Scientific Name	Status	Habitat**
Clustered Lady's Slipper State Threatened		layer. Mostly on northern aspects. Elevations range from 1200' to 5000'. Associated species are <i>Pachystima myrsinites</i> , <i>Holodiscus discolor</i> , <i>Spiraea betulifolia</i> , <i>Berberis nervosa</i> , <i>Calamagrostis rubescens</i> , <i>Arnica cordifolia</i> and <i>Carex geyeri</i> . In moist to rather dry and rocky open coniferous forests east of the cascades.
<i>Delphinium viridescens</i> Wenatchee Larkspur	D	This is a Wenatchee Mountain endemic found in dry Pinus ponderosa - Pseudotsuga menziesii forest habitats where mesic to moist sites are found as indicated by associated species such as: <i>Hydrophyllum fendleri</i> , <i>Alnus sinuata</i> , <i>Dodecatheon spp.</i> , <i>Salix scouleriana</i> , <i>Symphoricarpos albus</i> , <i>Achillea millefolium</i> , <i>Actaea rubra</i> , <i>Veratrum viride</i> , <i>Crataegus spp.</i> , <i>Rudbeckia</i> , <i>Aconitum</i> , <i>Holodiscus discolor</i> , <i>Heracleum lanatum</i> , <i>Urtica</i> , <i>Thalictrum occidentale</i> , <i>Senecio</i> , and <i>Angelica</i> .
<i>Draba aurea</i> Golden Draba	D	Well drained alpine meadows that are seasonally moist, krumholz, dry meadow, and talus slope habitats between 6800' to 7400'. Favors southerly aspects. Associated species: <i>Draba cana</i> , <i>Elmera racemosa</i> , <i>Potentilla spp.</i> , <i>Carex spp.</i> , <i>Vaccinium scoparium</i> , <i>Vaccinium caespitosum</i> , <i>Penstemon davidsonii</i> , <i>Arctostaphylos uva-ursi</i> , <i>Lupinus lepidus</i> , <i>Polemonium elegans</i> , <i>Festuca ovina</i> , and <i>Juniperus communis</i> .
<i>Draba cana</i> Lance-leafed Draba	D	Found in alpine fellfields on mid to upper slopes frequently in steep terrain from 5900' to 7800'. <i>Draba cana</i> appears to favor dry rocky exposures. Associated species are <i>Antennaria alpina</i> , <i>Carex phaeocephala</i> , <i>Erigeron compositus</i> , <i>Lupinus lepidus</i> , <i>Potentilla spp.</i> , <i>Arenaria obtusaloba</i> , <i>Penstemon davidsonii</i> , <i>Juniperus communis</i> and/or <i>Arctostaphylos uva-ursi</i>
<i>Dryas drummondii</i> Yellow Mountain Avens	S	Thought to be associated with calcium rich areas. Known to occur between 2000' and 6750' in elevation in open gravelly areas often above timberline or at lower elevations along streams.
<i>Eleocharis atropurpurea</i> Purple Spike Rush	S	Wet places associated with low elevation dry forests habitats similar to those found along Lake Chelan. Thought to be extinct by Washington Natural Heritage Program.
<i>Erigeron salishii</i> Salish Fleabane	D	Alpine species found on typically flat, southerly exposed ridge lines, mountain tops, fellfields, and upper slopes from 6800' to 8690'. Associated species are often <i>Potentilla nivea</i> , <i>Potentilla uniflora</i> , <i>Lupinus lepidus</i> , <i>Erigeron compositus</i> , and lichens.
<i>Eriophorum viridicarinatum</i> Green-keeled Cottongrass	D	Only known from one location on the Okanogan at 6000' elevation in fens/bogs, wet meadows, and wetland margins.
<i>Eritrichium nanum var elongatum</i> Pale Alpine Forget-me-not	D	Alpine ridges in relatively stable granitic scree associated with alpine cushion plant communities on gentle slopes, in exposed gravelly soil between 7300'-8300'. Some associated species are <i>Lupinus lepidus</i> , <i>Smelowskia calycina</i> , <i>Phlox hoodii</i> , <i>Carex breweri</i> .
<i>Gentiana glauca</i> Inky Gentian	D	Frequently associated with wetland transition zones on hummock topography, seeps, wetlands in basins and on alpine benches between 6800 and 8000' in the northeast portion of the Pasayten Wilderness.
<i>Gentiana tenella</i> Slender Gentian	D	Appears to favor subalpine and alpine meadows and wetlands with gently sloping terrain between 6800' and 7100' with southerly aspects. Frequently associated with <i>Sibbaldia procumbens</i> , <i>Vaccinium caespitosum</i> , <i>Potentilla</i> and <i>Carex</i> spp.
<i>Geum rivale</i> Water Avens	D	On the Oka this species is found in an open stand of lodgepole pine (PICO) and Engelmann spruce (PIEN) with an understory of skunkleaf polemonium (POPU9) at 6440'. In other places in the state it is associated with saturated lakeshores, streambanks, marshes, and meadows often with rich organic soils between 2500 and 6400' in elevation. It does not occur under heavy shrub cover. In general the habitat is described as along streambanks, lakeshores, bogs, and wet meadows.
<i>Geum rossii var. depressum</i> Ross's Avens	D	A high elevation alpine or krumholz habitat species associated with <i>Pinus albicaulis</i> , <i>Carex sp.</i> , <i>Luzula hitchcockii</i> , <i>Lupinus lepidus var. lobbii</i> , <i>Artemisia trifucata</i> , <i>Phlox diffusa</i> , <i>Arenaria capillaris</i> , <i>Antennaria</i> , <i>Senecio</i> , <i>Silene acaulis</i> , <i>Potentilla</i> , <i>Sedum</i> , <i>Saxifraga bronchialis</i> , <i>S. oppositifolia</i> , <i>Polemonium pulcherrimum</i> , <i>Artemisia</i> , <i>Arabis sp.</i>

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<i>Hackelia hispida</i> var. <i>disjuncta</i> Sagebrush Stickseed	D	Dry forest and shrub steppe habitats, often in rocky bluffs and cliff micro-habitats. Rocky talus at elevations of 600 to 2100 feet. Associated species include fern-leaved lomatium (<i>Lomatium dissectum</i>), whiteleaf phacelia (<i>Phacelia hastata</i>), fiddleneck (<i>Amsinckia lycopsoides</i>), branched phacelia (<i>Phacelia ramosissima</i>), and roundleaf alumroot (<i>Heuchera cylindrica</i>).
<i>Hackelia venusta</i> Showy Stickseed Federal Endangered State Endangered	D	Found in dry open bunchgrass forest habitats. In 'Non-cliff sites it is associated with <i>Pseudoroegneria spicata</i> , <i>Hieracium albertinum</i> , <i>Penstemon subserratus</i> , <i>Phacelia hastata</i> , <i>Lupinus wyethii</i> , <i>Delphinium nuttallianum</i> , <i>Achillea millefolium</i> , <i>Eriogonum ovalifolium</i> , <i>Bromus tectorum</i> , <i>Eriophyllum lanatum</i> , <i>Cryptantha simulans</i> , <i>Lomatium triternatum</i> , <i>Ceanothus velutinus</i> , <i>Chaenactis thompsonii</i> , <i>Pseudotsuga menziesii</i> . In Cliff sites: <i>Eriogonum compositum</i> , <i>Penstemon subserratus</i> , <i>Pseudoroegneria spicata</i> , <i>Poa</i> spp., <i>Galium multiflorum</i> , <i>Phlox diffusa</i> , <i>Heuchera</i> spp., <i>Mimulus alsinoides</i> , <i>Cheilanthes gracillima</i> . Also with <i>Holodiscus discolor</i> , <i>Pinus ponderosa</i> , <i>Pachystima myrsinites</i> , <i>Acer glabra</i> var. <i>douglasii</i> , <i>Arabis holboellii</i> var. <i>retrofracta</i> , <i>Spiraea betulifolia</i> , <i>Eriogonum</i> sp., <i>Cerastium cf nutans</i> , <i>Prunus emarginata</i> .
<i>Howellia aquatilis</i> Howellia Federal Threatened State Threatened	S	It occurs mostly in small, vernal ponds, although some of the ponds may retain water throughout the year. Soils are rich in organic matter and frequently contain partially decomposed leaves, stems, and wood. Habitat is in lower elevations between 10' and 2300'. Associated species include aspen (POTR), <i>Sium suave</i> , <i>Sparganium</i> , <i>Utricularia</i> , <i>Potamogeton</i> sp., and <i>Phalaris arundinacea</i> .
<i>Illiamna longisepala</i> Longsepal Globemallow	S	Found from sagebrush/bitterbrush steppe to ponderosa pine forests in the low to mid elevations between 500' to 4500'. Often found along gravelly stream sides in open shrub-steppe and open PIPO and PSME foreststo open hillsides in microsites not immediately adjacent to a stream channel. Generally, dry, open hillsides, gravelly streamsides and open ponderosa pine forests.
<i>Loiseleuria procumbens</i> Alpine Azalea	S	Known to occur only above 6000' in elevation in heather communities in the North Central Cascade mountains. Habitat is suspected to be associated with bogs in the lowlands and montane forest zones and in dry to mesic heath and tundra communities in the alpine zone.
<i>Luzula arcuata</i> Curved Woodrush	D	Typically found above 7000' in elevation in moist boulder talus crevices above timberline and often near mountain summits.
<i>Lycopodium dendroideum</i> Treelike Clubmoss	S	Habitat is dry to moist forests, bog edges, rocky or sandy places in the lowlands to montane zones. Known in WA state between 800' and 3650' in elevation in the moist forest zones that range from western hemlock to Pacific Silver fir and mountain hemlock to subalpine fir and cool moist Douglas-fir zones. Found both sides of the Cascades.
<i>Mimulus pulsiferae</i> Pulsifer's Monkey-flower	D	On the Oka., this species is, upon verification, has turned out to be a very rare <i>Mimulus patulus</i> that is now being considered for addition to both the state and R-6 list. The only sites documented in the state are on the Okanogan. Further taxonomic work is needed to confirm species on all the sites. <i>M. pulsiferae</i> / <i>M. patulus</i> sites are found in seasonally moist rock out crops and moist depressions in flat terrain in our ponderosa pine (PIPO) and dry Douglas-fir (PSME) forest types. In general this species habitat is in seasonally moist, open places often in exposed mineral soil from the foothills and valleys to the mid elevations east of the cascades.
<i>Mimulus suksdorfii</i> Suksdorf's Mimulus	D	Known from a steep talus and scree slope above timberline at 7100' with a south aspect on the Okanogan. It is suspected to occur in wet to dry open places from the lowlands to high in the mtns.
<i>Montia diffusa</i> Branching montia	D	Moist forests at lower elevations
<i>Nicotiana attenuate</i> Coyote Tobacco	S	Dry sandy bottom lands, dry rocky washes, and in other dry open places from 400' to 10,000'. Has been reported to occur with <i>Elymus cinereus</i> and common weedy species such as mullein (VETH), knapweed (CEDI), Russian thistle (SAKA), and cheatgrass (BRTE).
<i>Oxytropis campestris</i> var. <i>gracillis</i>	S	It is known from alpine habitat found near the summits of Mt. Chopoka and Rock Mtn in N. Central WA.

Scientific Name	Status	Habitat**
Slender Crazy Weed		Suspected habitat is wide ranging from mesic to dry meadows, grassy slopes, sandy or gravelly riverbanks and terraces, and forest opening from lowlands and steppe to alpine zones.
<i>Pedicularis rainierensis</i> Mt. Rainier Lousewort	D	<i>Pedicularis rainierensis</i> is generally found in moist alpine meadows, open coniferous forests, and on rocky slopes. Often it grows near streams, and it is known to occur throughout some lake basins. Common associates include <i>Phyllodoce empetriformis</i> (pink mountain heath), <i>Vaccinium deliciosum</i> (Cascade bilberry), <i>Valeriana sitchensis</i> (Sitka valerian), <i>Carex nigricans</i> (black alpine sedge), <i>C. spectabilis</i> (showy sedge), <i>Aster alpigenus</i> (tundra aster), <i>Veronica cusickii</i> (Cusick's speedwell), <i>Saxifraga ferruginea</i> (rusty hair saxifrage), <i>Anemone occidentalis</i> (white pasque flower), and the various <i>Pedicularis</i> (lousewort) species.
<i>Pellaea brachyptera</i> Sierra Cliff-brake	S	Known from 1100' to 2500' elevation in the state. Habitat is associated with dry rocky slopes low to mid elevations in open bunchgrass communities with scattered ponderosa pine.
<i>Pellaea breweri</i> Brewer's Cliff-brake	D	Phlox diffusa, Eriogonium umbrellalum, Artemesia.
<i>Petrophyton cinerascens</i> Chelan Rockmat	D	Only known from cliffs along the Columbia River in dry rocky habitat associated with <i>Heuchera cylindrica</i> , the lichen <i>Physconia leucoleiptes</i> , <i>Amelanchier alnifolia</i> , <i>Penstemon procerus</i> , <i>Leptodactylon pungens</i> , and <i>Eriogonum</i> spp.
<i>Parnassia kotzebuei</i> Kobzebue's Grass-of-Parnassus	D	From moderate to high elevations in the mountains. Known from 2 sites on the Okanogan ranging from 4800' to 6700' elevation on north aspects in moderate to steep terrain associated with cliff edges and at the base of talus slopes in moist seeps.
<i>Phacelia minutissima</i> Dwarf Phacelia	D	Found at mid elevations in the mountains and is known to be associated with <i>Veratrum californicum</i> , <i>Alder</i> , <i>Aster foliaceus</i> , <i>Haplopappus hirtus</i> , <i>Delphinium</i> spp
<i>Platanthera chorisiana</i> Choris' Bog-orchid	S	The species is commonly found in the wettest regions of sphagnum bogs and along streamsides. The species can be found growing on mosscovered rocks. It has been found in open areas at or just above the water table level. Washington sightings of <i>P. chorisiana</i> have been common by lakes. In Washington, <i>P. chorisiana</i> has been found to associate with <i>Tsuga mertensiana</i> (mountain hemlock), <i>Phyllodoce</i> sp. (mountain heather), and <i>Dodecatheon jeffreyi</i> (Jeffrey's shooting star). It grows at elevations ranging from 2540 - 4300 ft. (774-1301 m) in Washington.
<i>Platanthera obtusata</i> Small Northern Bog-orchid	S	Damp to wet places in forests, marshes, bogs, meadows, and along streambanks. Most Washington populations are in moist to wet forests dominated by PIEN and/or THPL from 800' to 5000' elevation.
<i>Platanthera sparsiflora</i> Canyon bog-orchid	D	Open wet areas, seeps, bogs at low to mid elevations, in a subalpine bog on the Wenatchee National Forest.
<i>Potentilla diversifolia</i> var. <i>perdissecta</i> Diverse-leafed Cinquefoil	D	It is from the west fork of Twentymile Creek at about 5820' elevation. Habitat is a moist meadow along the margin of a wetland and Englemann spruce and Lodgepole pine forest. Overall habitat is considered to be from alpine meadows and rocky ledges and slopes to subalpine or montane forests where it is found chiefly along stream banks.
<i>Potentilla nivea</i> Snow Cinquefoil	D	Found above 7000' on flat to gently sloping topography favoring southern exposures in alpine meadows, balds, fellfields, and rock ourcrops along alpine ridges and summits
<i>Potentilla quinquefolia</i> Five-leafed Cinquefoil	S	Gravelly meadows and river bars in the alpine and subalpine zones.
<i>Polemonium viscosum</i> Skunk Polemonium	D	Alpine species found above 6300' that favors flat to gentle terrain in alpine talus, fellfields in glacial cirques, summits, and shoulder slopes.
<i>Rubus acaulis</i> Nagoonberry	D	Found in open wetlands and wet meadows within spruce dominated forests at 5900' on hummocks around the wetlands and bogs.
<i>Salix glauca</i>	D	Habitat is associated with perennial streams, stream banks, and marshes in draws, floodplains, and glacial

Scientific Name	Status	Habitat**
Glaucous Willow		cirques and valleys between 5200' and 5850' in gentle to flat topography. It is known to occur with <i>Salix candida</i> .
<i>Salix maccalliana</i> Maccall's Willow	D	<i>Salix maccalliana</i> occurs in bogs, fens, swamps, and marshes in open, low-lying sites. In Washington, the species has been found growing in peaty soils at 2400 to 3000 feet (730 to 912 m) in elevation.
<i>Salix tweedyi</i> Tweedy's Willow	D	Often found along stream banks associated with moderate to swift moving streams in glacial valleys and cirques with gentle sloping topography, perennially wet areas associated with springs, seeps, fens, bogs, and lakeshores between 4620' and 7200' in elevation.
<i>Salix vestita</i> var. <i>erecta</i> Rock Willow	D	In Washington this taxon was found at 7000 feet (2133 m) elevation. This taxon typically occurs in open, often springy places at high altitudes in the mountains, commonly near or above the timberline.
<i>Sanicula marlandica</i> Black Snake-root	D	On the Oka. and other places in the state this species is associated with sub-irrigated, moist floodplains, moist woods, marsh edges and old riverine channels in gentle to flat topography with silty and sandy river bottoms. It frequently is with Englemann spruce (PIEN), aspen (POTR), cottonwood (POTR2), and/or alder (ALIN) between 1800' and 3400' in elevation.
<i>Saxifraga cernua</i> Nodding Saxifrage	D	Known to occur in boulder talus above 6500' in elevation in thin moist soils and moist scree.
<i>Saxifragopsis fragarioides</i> Strawberry Saxifrage	D	Found in dry forest habitats with <i>Pinus ponderosa</i> , <i>Pseudotsuga menziesii</i> , <i>Abies grandis</i> , <i>Amelanchier alnifolia</i> , <i>Prunus emarginata</i> , <i>Holodiscus discolor</i> , <i>Bromus tectorum</i> , <i>Balsamorhiza sagittata</i> , <i>Acer glabrum</i> var. <i>douglasii</i> , <i>Philadelphus lewisii</i> , <i>Berberis aquifolium</i> , <i>Achillea millefolium</i> , <i>Heuchera cylindrica</i> , <i>Saxifraga occidentalis</i> var. <i>idahoensis</i> , <i>Sedum divergens</i> , <i>S. lanceolatum</i> , <i>Lewisia tweedyi</i> , <i>Capsella bursa-pastoris</i> , <i>Cryptogramma crista</i> , <i>Phacelia hastata</i> , <i>Epilobium</i> sp., <i>Arabis</i> sp., fern spp., various lichen/moss spp., <i>Ceanothus velutinus</i> , <i>Purshia tridentata</i> , <i>Ceanothus sanguineus</i> , <i>Lupinus</i> sp. <i>Penstemon fruticosus</i> , <i>Penstemon richardsonii</i> , <i>Penstemon pruinosus</i> , <i>Heuchera cylindrical</i> , <i>Lomatium dissectum</i> , <i>Cerastium arvense</i> .
<i>Sidalcea oregana</i> var. <i>calva</i> Wenatchee Mt Checker-mallow Federal Endangered State Endangered	D	Found in dry forest habitats known to occur with <i>Delphinium viridescens</i> , <i>Veratrum viride</i> , <i>Aconitum columbianum</i> , <i>Geranium viscosissimum</i> , <i>Camassia quamash</i> , <i>Crataegus columbiana</i> , <i>Symphoricarpos albus</i> , <i>Solidago multiradiata</i> , <i>Populus tremuloides</i> , <i>Potentilla glandulosa</i> , <i>Castilleja</i> sp., <i>Carex</i> sp., <i>Juncus</i> sp., <i>Spirea douglasii</i> , <i>Rosa</i> sp., <i>Salix</i> sp., and <i>Pinus ponderosa</i> .
<i>Silene seelyi</i> Seely's Silene	D	Shaded crevices in ultramafic to basaltic cliffs and rock outcrops, and occasionally among boulders in talus. Occurs from 1500 to 6300 feet in elevation. It occurs where the canopy cover is less than 30% and on slopes of 15 to 20%. Associated species include alumroot (<i>Heuchera cylindrical</i>), Chelan penstemon (<i>Penstemon pruinosus</i>), and Wallace's selaginella (<i>Selaginella wallacei</i>). <i>Silene seelyi</i> is restricted to sites with poor nutrient and water availability; competition with other vegetation is, therefore, generally minimal. The sites are relatively stable, although slope failures and fracturing of the rocks do occur.
<i>Sisyrinchium septentrionale</i> Blue-eyed Grass	D	Occurs primarily in open wet meadows, sometimes in association with perennial streams and within a mosaic that includes coniferous forested wetlands which may include PIEN, PSME, ABLA, THPL, PIPO, ALSI, ALIN, and SYAL. Grasses and sedges commonly dominate the habitats. Known sites in Washington range from 2270' to 4080' and habitat range is thought to be between 2100' and 6100'.
<i>Spiranthes diluvialis</i> Ute's Ladies-tresses Federal Threatened State Threatened	S	In our area, this species is suspected to occur below 3500' in periodically flooded alkaline flat (moist meadows) wetlands adjacent to shrub-steppe, ponderosa pine, and dry Douglas-fir woodlands. Generally habitat is associated with floodplains, channels, streambanks, springs, seeps, lake and pond margins where soils are likely alkaline, periodically flooded, and moist throughout the growing season. Elevations range between 1500' and 7000'.
<i>Spiranthes porrifolia</i> Western Ladies-tresses	D	On the Oka it occurs between 5400' and 6800' in glacial cirque wetlands, bogs, and fens. It is associated with <i>Leptarrhena pyrolifolia</i> , <i>Caltha biflora</i> , <i>Trollius laxus</i> , <i>Carex</i> spp., <i>Eleocharis pauciflora</i> , <i>Pinus contorta</i> , <i>Pinus engelmannii</i> , and <i>Ledum glandulosum</i> . It is found on both sides of the Cascades but is mainly east of

Scientific Name	Status	Habitat**
		the crest. Frequently in vernal moist seeps in otherwise dry rocky habitats and depressions from 1100' in Chelan Co. in open ponderosa pine and Douglas-fir forests and meadows, down to 100' in the Columbia River Gorge oak woodlands. It is generally thought to be associated with wet meadows, along streams, in bogs, and in seeps along slopes.
<i>Talinum sediforme</i> Okanogan Flameflower	D	The habitat is in rocky exposed slopes and ledges in the lower mountains of Okanogan county. Most sites are between 2700' and 4000' elevation with a few sites documented as high as 6000'. It is predominantly on thin soils over exposed rock. Associated species include <i>Alium robinsonii</i> , <i>Erigeron compositus</i> , <i>Lewisia rediviva</i> , <i>Lomatium sp</i> , <i>Penstemon fruiticosus</i> , <i>Potentilla glandulosa</i> , <i>Sedum spp</i> , <i>Selaginella sp</i> , and <i>Woodsia oregano</i> .
<i>Teucrium canadense ssp viscidum</i> Woodsage	S	Wet areas along stream banks, moist bottom lands, and the periphery of small ponds between 1800' and 2300' elevation. Associated species include POTR2, <i>Salix sp</i> , <i>Mentha arvensis</i> , <i>Sium suave</i> , <i>Polygonum coccineum</i> , <i>Eleocharis palustris</i> , <i>Galium triflorum</i> , SYAL, PIPO, PSME, <i>Betula occidentalis</i> , and AMAL.
<i>Thalictrum dascycarpum</i> Purple Meadowrue	S	Tall (up to 6') dioecious plant found in deciduous riparian woods, damp thickets, swamps, and wet meadows, often adjacent to or within the floodplain. In Washington the elevation range is between 2000' and 2200'. Associated species are frequently <i>Crataegus sp</i> , SHCA, AMAL, POTR2, ROSE spp, SYAL.
<i>Trifolium thompsonii</i> Thompson's Clover	D	Endemic to southeastern Chelan County and adjacent Douglas County, WA. It occurs from ridgetops to canyon bottoms. Habitats include open ponderosa pine (<i>Pinus ponderosa</i>) woods to areas dominated by grasses (mainly <i>Agropyron spicatum</i>) and herbs. Occasional shrubs, including big sagebrush (<i>Artemisia tridentata</i>), stiff sagebrush (<i>A. rigida</i>) and serviceberry (<i>Amelanchier alnifolia</i>) also are present. A majority of the occurrences are on the fringe of the <i>Pinus ponderosa</i> Zone. The elevation ranges from 140 feet to 3760 feet. The species grows along ridgelines, on steep slopes, alluvial fans and canyon bottoms. It also occurs on the deeper soils in areas characterized by "biscuit-swale" topography.
<i>Trimorpha elata (Erigeron acris var elatus)</i> Tall Bitter Fleabane	S	Generally in swampy places in the mountains from Labrador and Newfoundland to BC and Alaska.
<i>Vaccinium myrtilloides</i> Velvet-leaf Blueberry	D	In Washington it occurs mid-slope in open semi-mature PIEN forests in a well developed moss layer at around 3500'. Other spp include SYAL, COCA, and LIBOL. In other parts of its range it occurs in dry to moist, sandy or rocky clearings and open woods, sphagnum bogs, and swamps.

**Habitat information was derived from a combination of the following: 2002 Washington Natural Heritage Program (WNHP) Site Database, Flora of the Pacific NW by Hitchcock and Cronquist, and Field Guide to Washington's Rare Plants 2000 cooperatively produced by WNHP and Spokane District BLM. Plant names and acronyms taken from the Plants Database (www.plants.usa.go).

Figure G-2. Habitat Descriptions for Rare or Little Known Species of Concern that are Documented (D) or Suspected to Occur (S) on the Okanogan-Wenatchee National Forest

<i>Scientific Name</i>	Oka-Wen	Habitat**
<i>Agoseris lackschewitzii</i> <i>Pink Agoseris</i>	D	On the Oka. this species is found between 4000-7760' on S to W aspects in moist to wet swells and meadows primarily in the subalpine and alpine habitats. Habitat in Washington is associated w/ moist to dry meadows, open woods, and exposed rocky ridge tops on various aspects from low elevations to timberline between 2900 and 7800'.
<i>Botrychium montanum</i> Mountain moonwort	D	On the Methow District this species occurs in moist shady forests of western red-cedar and spruce/ sub-alpine fir, red-osier dogwood thickets, riparian areas along streams, pond margins, and seeps. Also found along open canopy, grassy meadows and trail edges.
<i>Cypripedium montanum</i> Mountain Lady's-slipper	S	The dominant overstory vegetation ranges from dry ponderosa pine forest to wet grand fir, aspen and cedar. Populations with the greatest density of individual stems are often associated with the more mesic range of habitats, particularly in association with riparian areas or aspen stands. The range in canopy cover varies from less than 30% to greater than 60%.
<i>Corydalis aquae-gelidae</i> Clackamas <i>corydalis</i>	S	Wet places in the Cascades in the TSHE and ABAM zones with perennial streams, seeps, and springs with cold water and a gravelly-sand substratum.
<i>Githopsis specularioides</i> <i>Common Blue-cup</i>	D	This species is found on the dry hillsides along the north shore of Lake Chelan in the transition zone between forested and non-forested habitats between 200 and 2500 feet. Populations sizes are generally small and scattered.
<i>Hackelia tayloria</i> (<i>H. ssp. novum</i> , <i>Hacklia sp 2</i>) <i>Taylor's Stickseed</i>	D	High elevation species associated with <i>Pinus albicaulis</i> , <i>Abies lasiocarpa</i> , <i>Larix lyallii</i> , <i>Silene suksdorfii</i> , <i>Haplopappus greenei</i> , <i>Lomatium brandegei</i> , <i>Senecio elmeri</i> , <i>Arenaria obtusiloba</i> , <i>Lupinus lepidus</i> , <i>Campanula scabrella</i> , <i>Senecio fremontii</i> , <i>Eriogonum niveum</i> , <i>Achillea millefolium</i> , <i>Heuchera</i> , <i>Phacelia sericea</i> , <i>Eriogonum pyrrolifolium</i> , <i>Sedum</i> , <i>Castilleja</i> , <i>Penstemon fruticosus</i> , <i>P. davidsonii</i> , <i>Juniperus sp.</i> , <i>Artemisia sp.</i> , <i>Phacelia hastata</i> , <i>Solidago multiradiata</i> , <i>Eriophyllum lanatum</i> , <i>Crytogramma</i> .
<i>Mimulus washingtonensis</i> <i>Washington Monkey-flower</i>	D	Wet, moist, rocky, open slopes at low elevations. Possibly extinct or extirpated from Washington.
<i>Ranunculus pygmaeus</i> <i>Dwarf Buttercup</i>	D	Moist to wet seepage sites, snowbeds, shady ledges and scree slopes in the subalpine and alpine zones.
<i>Utricularia minor</i> <i>Lesser Bladderwort</i>	D	This species occurs in low nutrient lakes and peatbog pools in the lowland and montane zones at elevations from 135 to 4000 feet (40-1200 m) in Washington. Associated species found in Grays Harbor County include stonewort (<i>Nitella flexilis</i>), narrow-leaf burr-reed (<i>Sparganium angustifolium</i>), and greater bladderwort (<i>Utricularia macrorhiza</i>). <i>Utricularia minor</i> is an obligate wetland species.
<i>Eleocharis rostellata</i> <i>Peaked Spike-Rush</i>	S	The species is known from salt marshes along the coast and in alkaline or highly calcareous situations inland, often around hot springs. In WA, the species is known from streambanks, lake margins, around springs and in marshes. Associated species include porcupine sedge (<i>Carex hystericina</i>), slender sedge (<i>C. lasiocarpa</i>), woolly sedge (<i>C. lanuginosa</i>), berula (<i>Berula erecta</i>), western St. John's wort (<i>Hypericum formosum</i>), American bulrush (<i>Scirpus americanus</i>), creeping (continued): spike-rush (<i>Eleocharis palustris</i>), jointed rush (<i>Juncus articulatus</i>), giant helleborine (<i>Epipactis gigantea</i>), yellow monkey-flower (<i>Mimulus guttatus</i>), western witchgrass (<i>Panicum occidentale</i>), and western centaury (<i>Centaureum exaltatum</i>). Elevation 500 to 1850 feet.
<i>Eucephalus vialis</i> (<i>Aster vialis</i>) Wayside aster	S	Known only from Oregon in open woods on Westside. Habitat ranges between 500' and 3150' typically on uplands dominated by Douglas-fir in association with drier forest hardwoods such as Pacific madrone, golden chinquapin, and Oregon white oak.
<i>Packera porteri</i> <i>Porter's Butterweed</i>	D	In Washington this species was found on an unglaciated nunatak (a hill or mountain once surrounded by glacial ice) in deposited volcanic sediments and shifting talus at 7800 feet (2377 m) elevation. Associated species include whitebark pine (<i>Pinus albicaulis</i>), common juniper (<i>Juniperus communis</i>), and Davidson's penstemon (<i>Penstemon davidsonii</i>).
<i>Potamogeton filiformis</i> var. <i>occidentalis</i> <i>Western Fineleaf Pondweed</i>	D	This taxon is typically found in shallow, standing, or slow moving water. In Washington it was found from 1074 to 3550 feet (327-1082 m) elevation.

<i>Salix vestita</i> var. <i>erecta</i> Rock Willow	D	In Washington this taxon was found at 7000 feet (2133 m) elevation. This taxon typically occurs in open, often springy places at high altitudes in the mountains, commonly near or above the timberline.
<i>Silene sargentii</i> Sargent's Catchfly	D	<i>Silene sargentii</i> is found in subalpine and alpine forest from 7900 to 12500 ft (2400-3800 m) throughout its range. The elevation at which it was found in Washington is unknown.
<i>Carex macrochaeta</i> Large-awned Sedge	S	Habitat is often moist or wet, open places, and frequently is found near the coast in seepage areas, around waterfalls, in wet meadows, and along streams and lakes. In Washington, populations were found near a seepage area close to a slide alder (<i>Alnus sinuata</i>) thicket and on basalt cliffs at the base of a waterfall.
<i>Carex magellanica</i> ssp. <i>irrigua</i> Poor Sedge	D	In Washington, this taxon has been found in fens, bogs, shady wet meadows, shrub wetlands, and marshes, often growing in peat soil, at 1640 to 7000 ft (500 to 2134 m) elevation. Associated species include sphagnum, sedges (<i>Carex</i> spp.), tall cottongrass (<i>Eriophorum polystachion</i>), woodrush (<i>Luzula</i> sp.), western red cedar (<i>Thuja plicata</i>), rose spirea (<i>Spiraea douglasii</i>), Sitka alder (<i>Alnus sinuata</i>), prickly currant (<i>Ribes lacustre</i>), thinleaf huckleberry (<i>Vaccinium membranaceum</i>), strawberryleaf raspberry (<i>Rubus pedatus</i>), largeleaf avens (<i>Geum macrophyllum</i>), purple marshlocks (<i>Potentilla palustris</i>), elephanthead lousewort (<i>Pedicularis groenlandica</i>), western Labrador tea (<i>Ledum groenlandicum</i>), roundleaf sundew (<i>Drosera rotundifolia</i>), lodgepole pine (<i>Pinus contorta</i>), pioneer violet (<i>Viola glabella</i>), willows (<i>Salix</i> spp.), and rushes (<i>Juncus</i> spp.).
<i>Carex pauciflora</i> Few-flowered Sedge	S	In Washington sites are found in association with Western hemlock, Mt Hemlock, Western red cedar, and Pacific silver fir. Other associated species are ledum, vaccinium species, and rusty menziesia
<i>Coptis aspleniifolia</i> Spleenwort-leaved Goldthread	S	Known to occur in Pacific silver fir (<i>Abies amabilis</i>) and Mountain hemlock (<i>Tsuga mertensiana</i>) forest habitats. Other species frequently associated with these sites are: <i>Tsuga heterophylla</i> , <i>Thuja plicata</i> , <i>Vaccinium alaskaense</i> , <i>Menziesia ferruginea</i> , <i>Rubus spectabilis</i> , <i>Cornus canadensis</i> , <i>Maianthemum dilatatum</i> , <i>Linnaea borealis</i> , <i>Blechnum spicant</i> , <i>Oplonanax horridum</i> , <i>Acer circinatum</i> , <i>Berberis nervosa</i> , <i>Vaccinium parvifolium</i> , <i>Tiarella unifoliata</i> , <i>Chamaecyparis nootkatensis</i> , <i>Clintonia uniflora</i> , <i>Taxus brevifolia</i> , <i>Vaccinium ovalifolium</i> , <i>Rubus pedatus</i> , <i>Listera cordata</i> , <i>Picea sitchensis</i> , <i>Alnus rubra</i> , <i>Menziesia ferruginea</i> , <i>Gymnocarpum dryopteroides</i> , <i>Polystichum munitum</i> , <i>Dryopteris austriaca</i> , and <i>Athyrium filix-femina</i> .
<i>Coptis trifolia</i> Goldentread	S	Not known in Washington. In Oregon <i>C. trifolia</i> inhabits margins of boggy, wet, seepages within mature TSHE and ABAM forests. Northern sites inhabit more open muskeg habitat.
<i>Galium kamschaticum</i> Boreal Bedstraw	S	Moist, cold coniferous forests, in Cascades often on low angle slopes with saturated soils, under dense shrub or lady fern thickets, in old-growth forest canopy gaps, and in the silver fir/devil's club Alaska huckleberry plant association.
<i>Heterotheca oregano</i> Oregon Goldenaster	D	<i>Heterotheca oregana</i> grows on sand and gravel bars along rivers. In Washington, this species was found on a sandy riverbank at the edge of a Douglas fir-ponderosa pine (<i>Pseudotsuga menziesii</i> - <i>Pinus ponderosa</i>) forest at an elevation of 2600 ft (792 m).
<i>Juncus howellii</i> Howell's Rush	D	<i>Juncus howellii</i> prefers moist areas in the mountains. In Washington, this species was found in a wet, bouldery area at the base of a basalt cliff in a riparian zone at an elevation of 2840 ft (866 m). Associated species include glaucous willowherb (<i>Epilobium glaberrimum</i>), bedstraw (<i>Galium</i> sp.), clasping arnica (<i>Arnica amplexicaulis</i>), horsetail (<i>Equisetum</i> sp.), and violet (<i>Viola</i> sp.).
<i>Mimulus patulus</i> Stalk-leaved Monkey-flower	D	In Washington the species was found on ephemeral seeps, moist basalt, and very fine gravel on top of bedrock in a small drainage from 1000 to 2000 feet (300-600 m) elevation. Associated species include: common monkeyflower (<i>Mimulus guttatus</i>), cheatgrass (<i>Bromus tectorum</i>), Oregon twinpod (<i>Physaria oregana</i>), stoneseed (<i>Lithospermum</i> sp.) and spring draba (<i>Draba verna</i>).
<i>Penstemon eriantherus</i> var. <i>whitedii</i> Whited's Penstemon	D	This taxon occurs on west facing slopes of small canyons, and in dry and rocky habitats in the foothills of the Cascade Range and in the Columbia Basin from 525 to 3835 feet (160-1160 meters) elevation. It has been observed in antelope bitterbrush/Indian ricegrass (<i>Purshia tridentata</i> / <i>Oryzopsis hymenoides</i>), purple sage/wheatgrass (<i>Salvia dorrii</i> / <i>Agropyron spicatum</i>) and rabbitbrush/bluebunch wheatgrass (<i>Chrysothamnus nauseosus</i> / <i>Agropyron spicatum</i>) plant communities.
<i>Physaria didymocarpa</i> var. <i>didymocarpa</i> Common Twinpod	D	In dry forest habitats known to occur with <i>Agropyron spicatum</i> , <i>Sedum stenopetalum</i> , <i>Chrysothamnus nauseosus</i> , <i>Lomatium greyi</i> , <i>Eriogonum umbellatum</i> .
<i>Pilularia americana</i> American Pillwort	D	In Washington, <i>Pilularia americana</i> has been found in the middle zones of vernal pools from 1930 to 2310 feet (588-704 meters) elevation. Associated species at one or more sites include mosses, annual hairgrass (<i>Deschampsia danthonioides</i>), tiny mousetail (<i>Myosurus minimus</i>), finebranched popcornflower (<i>Plagiobothrys leptocladus</i>), neckweed (<i>Veronica peregrina</i>), Geyer's onion (<i>Allium geyeri</i>), toad rush (<i>Juncus bufonius</i>), needle spikerush (<i>Elocharis acicularis</i>), fruitleaf knotweed (<i>Polygonum polygaloides</i> ssp. <i>confertiflorum</i>), Pacific foxtail (<i>Alopecurus saccatus</i>), whitehead navarretia (<i>Navarretia</i>

		<i>leucocephala</i>), elegant calicoflower (<i>Downingia elegans</i>), and bractless hedgehyssop (<i>Gratiola ebracteata</i>).
<i>Plantanthera orbiculata</i> var. <i>orbiculata</i> Large Roundleaf Orchid	S	Habitat requirements appear to include shade and deep, moist undisturbed litter. Mostly known to occur in mesic to drier plant associations in the Western Hemlock and Pacific Silver Fir plant associations. Winter snow depth usually was less than 4'.
<i>Pyrrocoma hirta</i> var. <i>sonchifolia</i> Sticky Goldenweed	D	<i>Haplopappus hirtus</i> var. <i>sonchifolius</i> occurs in meadows and open or sparsely wooded slopes in the foothills and at moderate elevations. This taxon has been found at an elevation of 4700 ft (1400 m) in Washington, but is found at higher elevations south in its range. Associated species include American aster (<i>Aster foliaceus</i>) and Kittitas larkspur (<i>Delphinium multiplex</i>).
<i>Ribes oxycanthoides</i> ssp. <i>irriguum</i> Idaho Gooseberry	D	The species is found along streams, meadow openings associated with streams, and slopes of moist to dry canyons. Unlike other members of the genus, it is typically associated with conifers, including <i>Pinus ponderosa</i> , <i>Pseudotsuga menziesii</i> , and <i>Abies grandis</i> . Many different shrubs can occur with this taxon, including <i>Amelanchier alnifolia</i> , <i>Crataegus douglasii</i> , <i>Ribes cereum</i> , <i>Symphoricarpos albus</i> , and <i>Rosa woodsii</i> . Other species occurring with this taxon include <i>Carex geyeri</i> , <i>Smilacina stellata</i> , <i>Actaea rubra</i> , <i>Poa compressa</i> and <i>Poa palustris</i> . Elevations range from (1900)3000 to 5000 feet.
<i>Rotala ramosior</i> Lowland Toothcup	D	This species is found in damp areas in fine sand and silt. It grows in wet, swampy places, lakes and pond margins, and along free flowing river reaches in association with rush (<i>Juncus</i>) and spike-rush (<i>Eleocharis</i>) species. Populations in Washington frequently occur with grand red-stem (<i>Ammannia robusta</i>), Drummond's hemicarpha (<i>Lipocarpa aristulata</i>), slender flatsedge (<i>Cyperus bipartitus</i>), southern mudwort (<i>Limosella acaulis</i>), yellow-seed false-pimpernel (<i>Lindernia dubia</i>), and, in some cases, Columbia yellow-cress (<i>Rorippa columbiae</i>). In Washington, <i>R. ramosior</i> has been found from 200 to 2259 ft (61 to 689 m) elevation.
<i>Saxifraga rivularis</i> Pygmy Saxifrage	D	The species can be found on damp cliffs, rock crevices, and talus near snowbanks, as well as alpine slopes, cracks, and shaded cliffs. It is noted that the species is commonly found occurring as single plants rather than in clusters or populations. <i>Saxifraga rivularis</i> occurs around basaltic crevices, granitic cliffs, and moss-covered detritus, and can also grow on vertical rock faces. Elevation ranges from 6000-7000 ft (2000-2300 m).
<i>Schistostega pennata</i> MOSS	D	Occurs on the mineral soil in shaded pockets of overturned tree roots, often with shallow pools of standing water at the base of the root wad. It also grows attached to rock or mineral soil around the entrance to caves, old cellars and animal burrows.
<i>Scouleria marginata</i> MOSS	D	Semi-aquatic on rocks along the edge of streams. Forms dense, black mats on rocks in the spray zone of streams and waterfalls, often submerged for part of the year.
<i>Tetraphis geniculata</i> MOSS	S	Moist coniferous forest with large down logs. Occurs on the cut or broken ends, or lower sides of decay class 3, 4, 5 rotted logs or stumps and occasionally on peaty banks in moist coniferous forests from sea level to subalpine elevations.
<i>Dendrococaulon intricatulum</i> LICHEN	S	Mesic to moist forests in the upper western hemlock and lower pacific silver fir zone (30-2170'). Primarily in mature and old-growth Douglas-fir, hemlock, and pacific silver fir where it is epiphytic on lower twigs of suppressed understory hemlock and pacific silver fir. Less frequently on subalpine fir. Known west of Rainy Pass.
<i>Drematocarpon meiophyllizum</i> LICHEN	D	On rocks along stream banks and lake sides where frequently wetted.
<i>Hypogymnia duplicate</i> LICHEN	S	Unlikely found on the Eastside. Is an epiphyte on TSME, TSHE, ABAM, ABLA, and PSME in OG forests of W. Cascades, Olympics, and Oregon coast. Western N. Cascades it can be found in high ppt zones in OG TSME-ABAM forests in moist VAAL plant associations. Most commonly found on TSME.
<i>Leptogium burnetia</i> LICHEN	S	Infrequent over trees and rare over mossy outcrops in sheltered intermountain forests. Also rare in maritime localities.
<i>Leptogium cyanescens</i> LICHEN	D	Tree bark of both conifers and hardwoods, logs, mossy rocks in sheltered humid, cool microsites of intermountain forests.
<i>Loberia linita</i> var. <i>tenuoir</i> LICHEN	D	Found from the Arctic to NW Oregon and inland to western Montana. Typically associated with OG and climax ABAM forests and occasionally lower TSME in mesic to moist VAAL plant associations. Generally found on lower boles of conifers, especially ABAM.
<i>Nephroma bellum</i> LICHEN	D	Restricted to moist forests with strong Pacific coastal influence. Substrate is often riparian hardwoods.
<i>Niebla cephalota</i> LICHEN	S	A strictly coastal species, usually within sight or sound of the ocean on exposed trees and less often rock.
<i>Peltigera pacifica</i> LICHEN	S	Mossy logs, tree bases, soil and rocks in low elevation moist forest habitats.
<i>Platismatia lacunose</i>	S	On bark and wood mainly on hardwoods, especially <i>Alnus</i> . It is uncommon in moist riparian forests in the Coast Range and Cascades where it often occurs

LICHEN		on upper branches of <i>Alnus rubra</i> . Often associated with <i>Menegazzia subsimilis</i> (moist coastal forest spp) and <i>Hypotrachyna sinuosa</i> (low elevation moist riparian forests. Spps becomes more restricted to coastal areas the further north it is found). Also found in moist, cool upland sites. Note from taxa expert Chiska Derr: is not likely on the eastside but species would be restricted to riparian areas if present at all.
<i>Pseudocyphellaria rainierensis</i> LICHEN	S	Cold air drainages along rivers mainly west of the Cascades in moist OG forests at low to mid elevations, usually in forests dominated by PSME & TSHE. Epiphyte in the mid to lower canopy.
<i>Ramalina thrausta</i> LICHEN	S	Low elevation moist forests, especially riparian zones dominated by spruce or fir east of the Cascades. Generally, this species occurs in moist low elevation conifer stands that frequently have a hardwood component where it grows on branches and boles of conifers and hardwoods, as well as understory shrubs. One upland site in WA is associated with PSME, TSHE, ABAM with vine maple, ocean spray, western dogwood, salal and Oregon grape in the understory.
<i>Teloschistes flavicans</i> LICHEN	S	Confined to headlands and dunes in the Coastal fog belt, especially on capes or peninsulas.
<i>Tholurna dissimilis</i> LICHEN	D	On twigs and branches of exposed conifers in humid subalpine and alpine habitats. Mostly on exposed subalpine ridges and peaks, occasionally at low to mid elevations in cool moist sites.
<i>Albatrellus ellisii</i> FUNGI	D	Solitary, scattered, gregarious or in fused clusters on the ground in forests. On the Okanogan it is known from the Hidden Lakes area in the Pasayten Wilderness. Fruits in Autumn and Winter were snow free.
<i>Brideoporus nobilissimus</i> FUNGI	S	A perennial conk of late successional conifer forests in the Pacific Silver fir zone. Host conifers are <i>Abies procera</i> (Noble fir) and possibly <i>Abies amabilis</i> (Pacific silver fir)
<i>Clavariadelphus occidentalis</i> FUNGI	D	Solitary to gregarious or in caespitose clusters of two or three sporocarps; on soil or duff under mixed deciduous coniferous forests or deciduous forests. Fruits mainly in September in our area. In the range of the species it is September thru February and sometimes in May. Only one populations known that is documented on the Wenatchee portion of the Forest.
<i>Clavariadelphus sachalinensis</i> FUNGI	D	On soil or duff under mixed conifers. Known from Pasayten Wilderness Hidden Lakes area, Douglas-fir/Engelmann spruce forest type. Moist forests or riparian zones.
<i>Cudonia monticola</i> FUNGI	D	West of Rainy Pass, East Creek Trail. On <i>Picea</i> needles and conifer debris.
<i>Gomphus bonarii</i> FUNGI	D	Hidden in deep humus under <i>Pinus</i> and <i>Abies</i> species. Mainly east of the Cascades in Wash.
<i>Gomphus kauffmanii</i> FUNGI	D	Hidden in deep humus under <i>Pinus</i> and <i>Abies</i> species. West of Washington Pass in Swamp Creek drainage.
<i>Leucogaster citrinus</i> FUNGI	D	Found in association with roots of <i>Abies concolor</i> , <i>A. lasiocarpa</i> , <i>Pinus contorta</i> , <i>P. monticola</i> , <i>Pseudotsuga menziesii</i> , and <i>Tsuga heterophylla</i> from 280 meters to 200 meters in elevation.
<i>Pseudorhizina californica (Gyromytra californica)</i> FUNGI	D	Found fruiting, in early spring, in humus, on or adjacent to well-rotted stumps or logs of coniferous trees or on soil rich in brown rotted wood in moist areas. Solitary or in small groups in conifer woods.
<i>Ramaria amyloidea</i> FUNGI	D	Fruits in Fall (September & October) in humus or soil and matures above the surface of the ground. Associated with <i>Abies</i> species and <i>Pseudotsuga menziesii</i> and <i>Tsuga heterophylla</i> . Known to occur west of Rainy Pass.
<i>Ramaria aurantiisiccescens</i> FUNGI	D	Fruits in October in humus or soil and matures above the surface of the ground. Associated with <i>Abies</i> species and <i>Pseudotsuga menziesii</i> and <i>Tsuga heterophylla</i> . One population is known to occur in the Hidden Lakes area of the Pasayten Wilderness.
<i>Ramaria largentii</i> FUNGI	D	Fruits in humus or soil and matures above the surface of the ground. Associated with <i>Abies</i> species, <i>Pinus monicola</i> , <i>Pseudotsuga menziesii</i> , and <i>Tsuga heterophylla</i> .
<i>Ramaria rubrievanescens</i> FUNGI	D	In humus or soil. Associated with Pinaceae species.
<i>Ramaria rubripermanens</i> FUNGI	D	In humus or soil. Associated with Pinaceae species.
<i>Sarcodon fuscoindicus</i> FUNGI	D	On the ground in association with <i>Tsuga</i> and Pinaceae species.
<i>Spathularia flavida</i>	D	In clusters or fairy rings on litter or woody debris of conifer and hardwood forests.

FUNGI		
<i>Meesia triquetra</i> MOSS	D	In bogs, peatlands and wet woods in the upper montane forest types associated with <i>Pinus engelmannii</i> , <i>Pinus contorta</i> and <i>Abies lasiocarpa</i> . Known to occur in the Falls Creek drainage with <i>Meesia uliginosa</i> .
<i>Meesia uliginosa</i> MOSS	D	Bogs and moist rock fissures, usually in the alpine and arctic regions, sometimes at lower elevations. This species occurs on wet soil or peaty humus in wetlands and rock fissures of alpine and subalpine areas. Known to occur in the Falls Creek drainage with <i>Meesia triquetra</i> .
<i>Orthotrichum pylaisii</i> MOSS	D	Rocky outcrops in the shrub steppe habitat along the lower Methow River.
<i>Polytrichum strictum</i> MOSS	D	Upper montane forested peatlands and wet meadow habitats. Known from the Tiffany Mtn area.
<i>Tayloria serrata</i> MOSS	D	Grows on old dung, animal remains, humus, and occasionally on well rotted wood in moist forests habitats west of Rainy Pass.
<i>Tomentypnum nitens</i> MOSS	D	Bogs, fens and peatland habitats in mid to high montane forest and alpine habitats. Known to occur in the Falls Creek drainage and wet sites west of Washington Pass.
<i>Alectoria nigricans</i> LICHEN	D	Known to occur in the Harts Pass Tatle Peak area and near Billy Goat Mtn in the Pasayten Wilderness.
<i>Alectoria ochroleuca</i> LICHEN	D	A strictly arctic-alpine species that grows on the ground or rarely on shrubs. Known to occur in the Harts Pass and Tatle Peak area.
<i>Brodoa oroartica</i> LICHEN	D	Arctic alpine tundra to subalpine rocky ridges, exposed or somewhat sheltered by surrounding rock. Drainage in non-vegetated exposed ridgecrest habitat with large angular rock. Limited soil development in crevices. Alpine sod development limited to very local pockets in between rock. Known to occur in the Harts Pass area and Upper Twisp River.
<i>Cornicularia normoerica</i> LICHEN	D	Exposed rocky summits and ridges: one of the few erect-fruticose lichens that grows on exposed edges, corners and faces of rocks as opposed to occupying more sheltered rock faces and crevices. Limited soil development in crevices. Alpine sod development limited to very local pockets in between rock. Known to occur in the Upper Twisp River Drainage in non-vegetated exposed ridgecrest habitat with large angular rock.
<i>Loberia linita</i> LICHEN	D	East of the Cascades this species is found in montane to alpine habitats where it grows on alpine sod or mossy rocks. Thought to be most frequently associated with <i>Abies amabilis</i> and <i>Vaccinium alaskaense</i> forest habitats. Known to occur west of Rainy Pass and the Upper Twisp River.
<i>Nephroma occultum</i> LICHEN	D	Typically associated with old growth forest on the west slopes of the Cascades. <i>Pseudotsuga</i> – <i>Tsuga heterophylla</i> forests with an abundance of <i>Lobaria oregano</i> . Grows on branches in the mid to upper tree canopy. Known to occur in moist riparian habitat east of the Cascades.
<i>Umbilicaria phaea</i> var <i>coccinea</i> LICHEN	D	Exposed to somewhat shaded rock outcrops and talus, common at low to mid elevations and less frequent at high elevations.
<i>Umbilicaria angulata</i> LICHEN	D	An alpine to subalpine species found on alpine sod interspersed with coarse rock and cliff ledges on very steep N facing slopes well above timberline. Likely subjected to much fog intercept.
<i>Umbilicaria havaasii</i> LICHEN	D	Grows on exposed edges, corners and faces of rocks as opposed to occupying more sheltered rock faces and crevices. Limited soil development in crevices. Alpine sod development limited to very local pockets in between rock. Known to occur in the Upper Twisp River Drainage in non-vegetated exposed ridgecrest habitat with large angular rock.
<i>Umbilicaria polyrhiza</i> LICHEN	D	Upper montane forested peatlands and wet meadow habitats. Known from the Tiffany Mtn area.
<i>Umbilicaria vellea</i> LICHEN	D	Grows on exposed edges, corners and faces of rocks as opposed to occupying more sheltered rock faces and crevices. Limited soil development in crevices. Alpine sod development limited to very local pockets in between rock. Known to occur in the Upper Twisp River Drainage in non-vegetated exposed ridgecrest habitat with large angular rock.

**Habitat information was derived from a combination of the following: Washington Natural Heritage Program (WNHP) Site Database, Flora of the Pacific NW by Hitchcock and Cronquist; Field Guide to Washington's Rare Plants 2000 cooperatively produced by WNHP and Spokane District BLM; Lichens of N America by Brodo, Sharnoff and Sharnoff; Macrolichens of the PNW, McCune and Geiser; Moss Flora of the PNW, Eva Lawton. Plant names and acronyms taken from the Plants Database (www.plants.usa.gov).